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OJCS 4195-75
17 OCT 1975

MEMORANDUM FOR: Comptroller

SUBJECT : SAFE Budget Explanation

1. The following will explain the budgeted items for Facility Preparation, Hardware Procurement and System Software Development for FY-76 and FY-77 as requested at the 14 October 1975, OMB budget hearing on the SAFE project.

2. As noted in the budget hearings we are currently in the state of system requirements definition which will lead to a systems architecture including hardware and software requirements in the TQ 1976. At that time proposals will be solicited from industry for hardware and software to make up a system to satisfy these requirements. Since the overall system design will have been documented at that point in time, it is anticipated that vendors will be selected and that initial hardware installation for use in system software development and test can be delivered by November 1977. This then will require the preparation of a site prior to that time.

3. Facility Preparation: In this budget category are site renovation and installation of power, heat exchange and the initial complement of communications equipment. It is anticipated that the bulk communications facility required in the later phases of SAFE will be budgeted by Commo when this total requirement of SAFE is adequately defined.

4. The $2,000,000 in FY-77 is for the complete preparation of a 9000 square foot facility to house the initial complement of hardware outlined under hardware procurement. This estimate is based on an estimate of $190 per square foot from Logistics for the preparation of computer space and a copy of the estimated items is attached. It anticipates primary and back-up power and adequate communications facility for handling the mainframes and up to a dozen terminals within that space.

5. The $600,000 in FY-76 which was designated for long lead items may be dropped since adequate planning in this period should permit the acquisition of equipment and installation in late FY-77.

6. Hardware Procurement: Since the system architecture is not completed at this point in time it is impossible to be precise about the equipment to be purchased. It is certain that it will not be a replication of the currently installed Interim SAFE System as it would not be able to carry the load nor operate in the mode required. Given two prospective architectures, the amount of expenditure during FY-77 will be approximately the same. In the one case it would involve the procurement of four large scale mini-computers of the PDP-11/70 class for approximately $1,500,000, and associated storage, unit record and support equipment of approximately $1,750,000 This would include disk storage units, magnetic tape drives, card readers, printers, controllers and some form of common storage. Additional requirements would be for approximately 10 terminals of 2 basic types averaging approximately $15,000 apiece for an additional $150,000 and special channel interfaces for approximately $300,000.

7. The alternative architecture would be for one large computer mainframe of the IBM 158 class and two relatively smaller mini's with the same compliment of terminals and storage except that the common storage would not be required. The mainframe cost would be a nominal configuration for this class of machine, costing approximately $2,500,000 and the disk storage requirements would be reduced to $1,000,000 and the support equipment and mini-computers would likewise be reduced to under $500,000.

8. Either of these configurations would cost approximately $4,000,000 and would be required in order to proceed with system development.

9. System Software Development: With the system architecture defined and the design and analysis of the major system elements under way it will be necessary in FY-77 to let contracts for the development of major system software elements. One of these will be a data base management system to accommodate the various file structures required in the system with an initial contract of approximately $700,000. Another element will be systems communications control for the

coordination of all of the elements of the system with an initial contract of $700,000 in this area. The third major element requiring work in FY-77 will be for the initial development of operating system and utility software required to permit later contracting of applications packages in FY-78 and FY-79.

10. These elements must be initiated early so that the interfaces become defined, checked out and stable, allowing design of the subsystems and applications packages to start with no likelihood of re-design required later.

11. Summary: Those elements outlined above must be initiated as shown in FY-77 in order that the system may be built in an orderly manner, avoiding excess cost which would be incurred if any major piece of the system is required to wait for the definition of proper interfaces. These items all involve long lead elements, the delay of which can have severe repercussions across the system. We would be happy to discuss these elements or the overall pr[redacted]

STATINTL

HARRY E. FITZWATER
Director of Joint Computer Support

Attachment: a/s

cc: AR/DDA

REVISED PROJECT SAFE ESTIMATE (19,000 SQUARE FEET)

	Original 14,000 Sq. Ft. FY-75	Partial 9,000 Sq. Ft. FY-76 10% Inflation	Partial 6,000 Sq. Ft. FY-77 22% Inflation	Complete 4,000 Sq. Ft. FY-79 46% Inflation
Renovation	$636,000	$449,743	$332,537	$265,303
Wall Tile	28,000	19,800	14,640	11,680
Drop Ceiling	35,000	24,750	18,300	14,600
Fire Detection	50,000	35,357	26,143	20,857
Water Detection	18,750	13,259	9,804	7,821
Smoke Detection	62,500	44,196	32,678	26,071
Lighting	45,600	32,245	23,855	19,031
60 Hz Distribution (south)	136,800	96,789	71,565	57,095
400 Hz Distribution (south)	30,400	16,720	18,544	--
UPS (60/400 Hz)	800,000	440,000	488,000	--
Building Modifications	50,000	55,000	--	--
Chiller pumps/piping	22,800	25,080	--	--
Control Work	30,500	33,550	--	--
Computer Room HVAC	270,000	190,928	141,173	112,630
SUBTOTAL	2,216,350	1,477,417	1,177,239	535,088

	Original 14,000 Sq. Ft. FY-75	Partial 9,000 Sq. Ft. FY-76 10% Inflation	Partial 6,000 Sq. Ft. FY-77 22% Inflation	Complete 4,000 Sq. Ft. FY-79 46% Inflation
Additional Costs				
C Vault Expansion	$300,000	$330,000	--	--
C Vault Distribution	100,000	110,000	--	--
Critical Distribution	100,000	22,000	170,800	64,240
Data Grid Distribution	100,000	--	--	--
TOTAL	2,816,350	1,939,417	1,348,039	599,328